CXW / tcg 11 / 20 / 2001

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's Proposed Policies and Programs Governing Low-Income Assistance Programs.	Rulemaking 01-08-027 (Issued August 23, 2001)

ASSIGNED COMMISSIONER'S RULING APPROVING LOW INCOME ENERGY EFFICIENCY IMPACT EVALUATION PLAN FOR PY2001

On July 3, 2001, the Reporting Requirements Manual Working Group (RRMWG) submitted a Program Year (PY) 2001 Low Income Energy Efficiency (LIEE) Impact Evaluation Plan in compliance with Decision (D.) 01-05-033, Ordering Paragraph 18. My ruling of August 24, 2001 directed the RRMWG to obtain public input on the plan, consistent with Commission direction in D.01-05-033. A public workshop was held on September 18, 2001.

The RRMWG consists of participants from Pacific Gas and Electric Company, Southern California Edison Company, Southern California Gas Company, and San Diego Gas & Electric Company. The Commission's Energy Division and Office of Ratepayer Advocates also actively participate in the RRMWG, but generally do not take positions on the RRMWG filings and recommendations. In this instance, the Energy Division facilitated the workshop. Workshop participants are listed in Attachment 1.

The RRMWG filed a revised LIEE Impact Evaluation Plan on September 24, 2001. No comments were submitted.

I have reviewed the plan in consultation with Energy Division and the assigned Administrative Law Judge. By this ruling, the PY2001 LIEE Impact Evaluation Plan presented in Attachment 2 is hereby approved.

Dated November 20, 2001, at San Francisco, California.

/s/ CARL WOOD
Carl Wood
Assigned Commissioner

ATTACHMENT 1

PY2001 LIEE Program Evaluation
Public Input Workshop
Pacific Energy Center, San Francisco, CA
September 18, 2001

Attendees: The following utility staff, consultants, and guests were present for the workshop:

PG&E:	Mary O'Drain	415-973-2317	mjob@pge.com
CAASM:	William F. Parker	650-595-1342	wparker@baprc.com
Southwest Gas:	Wally Kolberg	702-876-7367	wally.kolberg@swgas.com
PG&E:	Diane Calden	415-973-2461	dlcg@pge.com
CPUC-Energy:	Eli Kollman	415-703-5649	ewk@cpuc.ca.gov
CPUC-Energy:	Jeorge Tagnipes	415-703-2451	jst@cpuc.ca.gov
CPUC-ORA:	Gilbert Escamilla	415-703-1862	gil@cpuc.ca.gov
ICA:	Bob Burt	916-444-2950	bob.burt@macnexus.org
CPUC-ORA:	Lynn Maack	415-703-1628	lam@cpuc.ca.gov
SCE:	Jack Parkhill	626-302-8040	jack.parkhill@sce.com
XENERGY:	Fred Coito	510-891-0446	fcoito@xenergy.com
XENERGY:	Tami Rasmussen	510-891-0446	trasmussen@xenergy.com
CPUC:	Stephen Rutledge	415-703-1809	sjr@cpuc.ca.gov
PG&E:	Long Nguyen	415-973-3610	lcn2@pge.com

Call-Ins: The following utility staff and guests called in to the meeting:

SDG&E:	Kevin McKinley	858-654-1260	kmckinley@sdge.com
SCG:	Jim Green	213-244-3614	jgreen@socalgas.com
SCE:	Angela Jones	626-302-8302	angela.jones@sce.com
SCE:	John Fasana	626-302-8199	john.fasana@sce.com
SDG&E:	Barbara Cronin	858-654-8782	bcronin@sdge.com
ORA:	Josie Webb	415-703-2247	wbb@cpuc.ca.gov

(END OF ATTACHMENT 1)

ATTACHMENT 2

PY2001 LIEE Impact Evaluation Plan
(Revised September 24, 2001)

This document provides a plan for assessing the impacts of new energy efficiency measures designed for Rapid Deployment in PY2001 as part of the statewide Low Income Energy Efficiency (LIEE) Program. Ultimately, it is expected that the impact assessment of the new measures will be incorporated into a broader, overall impact evaluation of the PY2001 LIEE Program that is required for the PY2001 Shareholder Incentive Mechanism. However, project tasks will be scheduled to provide early feedback on the new Program measures, and the evaluation design will be adjusted to allow for special coverage of the new measures.

1. New PY2001 Measures

In addition to a large array of measures installed during PY2000 (and being evaluated as part of the PY2000 impact evaluation), new LIEE measures instituted for Rapid Deployment in PY2001 include:

- Replacement of inefficient air conditioners with high efficiency models (central systems and window / wall units);
- Duct sealing and repair;
- Whole house fans;
- Replacement of inefficient or inoperable water heaters with high efficiency units;
- Set-back thermostats; and
- Evaporative cooler maintenance.

In addition, duct insulation may also be included as a new measure for PY2001 since it may be required by code in some areas when doing duct repair. The utilities are interested in evaluating the cost-effectiveness of this measure for potential inclusion in future LIEE programs.

Also, renters are now eligible across all service territories to receive evaporative coolers, air conditioners, water heaters, refrigerators, and hard-wired lighting fixtures. (In the past, only home and / or appliance owners were eligible for these measures.)

2. Impact Evaluation

The impact evaluation is intended to quantify first-year load impacts by developing savings estimates for PY2001 installed measures based primarily on a billing analysis. The billing analysis will be supported by telephone surveys of program participants. In addition, engineering estimates of program impacts will be developed from tracking-system data on program accomplishments, utilizing measure-specific impacts developed from the PY2000 impact evaluation and from standard engineering calculations for the new measures.

The basic steps of the impact evaluation are presented next.

2.1 Task 1: Project Initiation and Planning

The first part of this task is a project initiation meeting with program staff and others to present an overview of the evaluation and to ensure that key issues that need to be addressed in the evaluation are identified. Then an evaluation plan is developed to describe the evaluation approach and tasks required to complete the project. Issues raised at the initiation meeting are integrated into the evaluation plan.

Deliverables: Memo reporting on the project initiation meeting; evaluation plan.

2.2 Task 2: Collect and Assess Program Tracking Data

An extract of PY2001 program tracking data will be obtained from the utilities as soon as it becomes available. Program accomplishments, in terms of participants and units of each measure installed, will be tabulated and compared against utility records to ensure completeness of the data. Measure installations also will be tabulated by key demographic categories (climate zone, single vs. multi family, own vs. rent, etc.) to facilitate the initial calculation of program savings and the sample design.

Deliverable: Memo reporting on program accomplishments.

2.3 Task 3: Develop Initial Measure and Program Savings Estimates

Initial estimates of measure and program savings will be developed for the PY2001 LIEE program by applying measure unit savings estimates to tracking system measure counts (developed in Task 1). In order to provide timely feedback on the effects of new program measures, these estimates should be developed as soon as possible, after receiving the tracking system extract.

Unit savings will come from a variety of sources, as necessary. For measures that were also applicable to the PY2000 program, measure savings from the PY2000 impact evaluation will provide the best estimate of measure savings. The work completed by the standardization team may also be useful in this regard. However, for measures new to the LIEE program in 2001, different savings sources will need to be tapped. Key

sources for new-measure savings estimates will include: the DEER Measure Cost and Savings Study (XENERGY 2001), past program evaluations, a review of secondary-source data on residential measure impacts, and engineering calculations using appropriate parameters keyed to low income dwellings.

Several of the PY2001 new measures involve the offering to renters of PY2000 measures that were available previously only to home / appliance owners (evaporative coolers, air conditioners, water heaters, and refrigerators). Adjustments will be required in order to apply PY2000 impact estimates to the new group of PY2001 participants. Factors such as dwelling and household size will need to be accounted for as rental units are often smaller than single family homes that are occupied by homeowners. In addition appliances are often smaller and thermal properties of the dwelling are different. Thus differences in base energy usage between single family and multi-family dwelling should be taken into account in the analysis of these measures with expanded eligibility. We will use the results of the PY2000 impact evaluation to develop unit energy consumption estimates for renters, which will inform our assessment of the potential impacts of these measures in multi-family applications.

Unit measure savings will ultimately be integrated into the impact billing analysis (Task 5 below). The billing analysis will provide adjustments to these initial savings estimates that are calibrated to customer bills.

Deliverable: Memo reporting on initial measure and program impacts.

2.4 Task 4: Develop Sample Design for Telephone Surveys

Using data from the program tracking system, sample designs will be developed for each utility and will be representative of the PY2001 LIEE program participant population within each utility's service territory. The sample will be segmented by utility, measure type, and climate zone. The segmentation strategy will ensure that new PY2001 measures receive adequate coverage to support statistically significant and meaningful impact results. Sample sizes should be in the 200 to 250 range, per utility, consistent with the PY2000 evaluation.

Deliverable: Memo on sample design.

2.5 Task 5: Conduct Participant Telephone Surveys

A participant telephone survey will be implemented through this study. The survey instrument will be designed to collect the minimum data requirements in order to analyze impacts via the billing analysis. It will include a set of questions common to all utility programs (e.g., housing characteristics and demographics) and separate modules to specifically address the issues relating to each measure group (as these may vary by

utility). In addition, this survey will address PY2001 program participant satisfaction issues.

The telephone surveys will be conducted using an experienced survey research firm. A CATI (computer assisted telephone interview) system will be used to ensure accurate recording of survey responses and timely transfer of survey data.

Deliverable: Sample disposition report.

2.6 Task 6: Conduct Billing Analysis

This task involves completing a statistical billing analysis in order to refine the load impacts by measure developed in Task 2 and to calibrate results to changes in customer bills.

In conducting the billing analysis, alternate estimation methods will be explored. Based on past experience, a pooled monthly / cross-sectional model will probably be the most successful for developing impact estimates. This model uses a form of conditional demand analysis sometimes referred to as Statistically Adjusted Engineering (SAE) modeling. In this model, monthly energy usage is modeled in a regression equation as a function of household and dwelling characteristics, weather data, and engineering estimates of program savings (from Task 2). Other variables accounting for changes in customers' energy use can be developed from the telephone survey data and can be added to the billing model to factor out non-program effects on customer bills. The regression coefficients for the energy savings variables are then used to calibrate (or statistically adjust) initial program impacts developed in Task 2.

Data for the billing analysis, developed on a household basis, will consist of:

- Monthly energy consumption data from utility billing records;
- Weather data;
- Energy savings estimates from Task 2;
- Household and dwelling characteristics from the program tracking data; and
- Data developed from the telephone surveys.

Several categories of billing analysis models will be explored:

- Models including all PY2001 program participants with adequate billing data;
- Models including all PY2001 program participants and a control group consisting of prior-year participants; and
- Models utilizing only the program participants who receive telephone surveys.

The models that include all participants will provide the best representation of program accomplishments across all measures and customers, but these models lack the additional detail on non-program factors affecting energy consumption that are gleaned from survey data. The models that utilize only surveyed participants can make use of the additional survey data to refine savings estimates, but these models rely on a sample and will not be as representative of the entire program. Both types of models can be developed, and the results can be compared to provide the best overall estimates of program impacts.

Deliverable: Inputs to the final report.

2.7 Task 7: Report of Findings

Draft and final impact evaluation reports will be developed for the project. The final report will present estimates of first-year savings impacts per measure and per dwelling for each utility, as well as statewide.

The report will include, at a minimum, the following:

- Executive Summary–a "mini-report," written in non-technical style to be distributed to a wide audience
- Introduction–a summary of research objectives, program description, and measure list
- Methodology–a description of the research methods and data used in the study
- Analysis and Results–a presentation of the study findings and results
- Appendices–copies of relevant surveys and codebooks, documentation for all datasets, etc.

Deliverable: Draft and Final reports. The final report will be provided in hard copy and electronic format.

3. Timeline and Budget

Below is a preliminary timeline and budget for completing the analysis of impacts related to new energy efficiency measures designed for Rapid Deployment in PY2001, as well as the overall PY2001 statewide Low Income Energy Efficiency (LIEE) Program.

Task	Timeline	Budget
1. Project initiation / planning	February 2002	$25,000
2. Collect and assess program tracking data	February 2002	$25,000
3. Develop initial measure and program savings estimates	March 2002	$25,000
4. Develop sample design for telephone surveys	Spring / Summer 2002	$10,000
5. Conduct telephone surveys	Sept. / Oct. 2002	$50,000
6. Conduct billing analysis	Nov. 2002-Feb. 2003	$25,000
7. Report on findings	February 2003	$15,000

(END OF ATTACHMENT 2)

CERTIFICATE OF SERVICE

I certify that I have by mail, and by electronic mail, to the parties to which an electronic mail address has been provided, this day served a true copy of the original attached Assigned Commissioner's Ruling Approving Low Income Energy Efficiency Impact Evaluation Plan for PY2001 on all parties of record in this proceeding or their attorneys of record.

Dated November 20, 2001, at San Francisco, California.

/s/ TERESITA C. GALLARDO
Teresita C. Gallardo

N O T I C E

Parties should notify the Process Office, Public Utilities Commission, 505 Van Ness Avenue, Room 2000, San Francisco, CA 94102, of any change of address to insure that they continue to receive documents. You must indicate the proceeding number on the service list on which your name appears.

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